

REMARKS

In the present amendment, the specification has been amended to make minor technical corrections therein. Also, claim 9 has been canceled; claims 1, 7, 8, and 10-14 have been amended, and new claims 15-19 have been added. It is submitted that all of these claims are allowable for the reasons set forth below.

Applicant acknowledges the courtesy of a telephone interview with the examiner relating to this case. It is believed that the present claim amendments respond to the examiner's concerns and place the case in condition for allowance.

As explained in the background of the invention, the present invention overcomes a problem with prior plant bunching machines which failed to hold the plant stems gently yet firmly and in a reasonably accessible position for tying the stems together. In the present invention, a flexible belt is mounted under tension and extends between a pair of movable fingers. When the fingers are opened, plant stems are received between the fingers into engagement with the flexible belt. The flexible belt expands into an enlarged loop as the stems are received in the belt, and when the bunch is complete, the fingers move together to wrap the flexible band completely around the bunch of stems, holding them securely. The gripper mechanism can then be moved away from the rotating wheels of the supply mechanism so that the stems can be conveniently tied together.

Other features of the invention include a second pair of gripping fingers and flexible band for providing an enhanced ability of the gripping mechanism to hold and orient the stems. Also, a band upholding device maintains the flexible band at a desirable elevation. Also, a pair of resiliently biased lips adjacent the rotating rollers of the supply mechanism restrain the rollers from rubbing on the plant stems after they have been deposited in the gripper mechanism. Also,

coordinated movement of the gripper arms is provided by means of gear wheels 60 so that both arms close and open together. Also, an engagement element 62 and stop 64 automatically cause the fingers to open when they approach the supply rollers and to close when they move away from the supply rollers, providing a simple and effective means for opening and closing the fingers at the proper time.

All of these features are covered in one or more of the claims of the present application, and none of the features are disclosed in any of the references of record. Accordingly, it is submitted that all of the claims of the present application are allowable.

Considering the claims in more detail, claim 1, as amended, includes a supply mechanism wherein a pair of rollers positioned adjacent each other engage and deliver the plant stems to a receiving mechanism. The receiving mechanism includes a pair of fingers capable of gripping together around the stems after they are gathered together in a flexible band maintained under tension between the fingers. The stems are delivered into engagement with the band when the fingers are in an open position, and when a bunch of stems has been received in the flexible band, the fingers are closed, wrapping the band around the stems. The gripper mechanism can then be moved away from the rotating supply wheels so that the stems can be tied together and removed.

The references of record do not disclose the claimed invention. Anguiano and Gularate disclose apparatus for bunching broccoli wherein receptacles for broccoli stems are moved along a conveyor path where they are clamped into the receptacle, so that the ends of the broccoli stems can be cut off. Neither patent discloses the supply mechanism and closely spaced counter-rotating rollers of the present invention. In addition, in Anguiano, the broccoli stems are retained in upwardly facing U-shaped buckets with fixed position (non-moving) fingers. Elastic tie bands

are placed by workers over the upstanding arms of the U-shaped supports, so that when the ends of the broccoli stems are cut off another worker can tie the stems together by simply pulling one end of the elastic tie band over the ends of the stems. The elastic tie bands 38 in this case are not flexible straps. They are simply put there to provide a convenient location for storing the ties for tying the stems together. In the Anguiano device, broccoli stalks are held in place by a series of curved clamping plates 50 mounted on chain 52 that press the broccoli stems downwardly into the U-shaped bottoms of the stalk supports. Moreover, there are no movable gripping fingers to wrap a flexible band around the stems when the bunch is completed. The flexible band of the present invention provides a soft cushioned holding effect on fragile flower stems that minimizes any damage to stems. Perhaps this is not as important with broccoli stems as it might be with the stems of decorative plants, but in any case, the construction of the present invention is not shown or suggested in Anguiano.

Gularte does not supply any deficiency in Anguiano. The Gularte patent is prior to Anguiano and is cited in the later filed Anguiano patent. Thus, it is assumed that Anguiano was deemed to be an improvement over Gularte, and the apparatus of Gularte was not used in Anguiano. Thus, these two references specifically teach that the two types of stem holding devices are not used together.

Gularte discloses another different type of conveyor line for tying broccoli stems in bunches. In this conveyor line, the broccoli stems are deposited between a pair of pivoting clamp arms which engage and hold the broccoli stems down in a receptacle. This device includes no flexible band at all (and could not), and thus there is no cushioning holding device that wraps around the stems in a resilient holding manner. Nor is there any suggestion that any

such device would be used for desirable in the broccoli bunching apparatus of Gularce or Anguiano.

All of the claims of the present application clearly distinguish both of these references, as well as all of the references discussed previously in this case. Accordingly, it is urged that all of the claims are allowable, and such action is respectfully solicited.

With specific reference to the examiner's concern that claim 9 may cover human fingers as opposed to mechanical fingers, claim 9 has been rewritten as new claim 15, and this concern has been addressed by clearly specifying that the fingers are mechanical fingers that are part of the claimed machine. A similar change has been made in other claims. It is urged that all of the claims now clearly contemplate that the gripping fingers are mechanical fingers that are part of the machine.

In view of the foregoing, allowance of all the claims in the application (claims 1-8 and 10-19) are allowable, and such action is respectfully requested.

Respectfully submitted,

Dated: 9/26/05

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